

John Fry Fellowship Lecture

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Dr Starfield's 1992 book on Primary Care is widely regarded as a seminal contribution to thinking and assessment of the subject. She also has made major contributions in the areas of health status measurement for children and adolescents, and in case-mix assessment and adjustment. Her 1998 book, *Primary care: Balancing Health Needs, Services and Technology*, provides innovative methods to evaluate the attainment and contributions of primary systems and practitioners. It complements the earlier book by highlighting two additional areas: equity in health services and health, and overlap between clinical medicine and public health.

Dr Starfield was the co-founder and first President of the International Society for Equity in Health, a scientific society devoted to contributing knowledge to assist in the furtherance of equity in the distribution of health.

Barbara Starfield, MD, MPH

Contributions of Evidence to the Struggle Towards Equity

'... the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Primary health care is the key to attaining this target as part of development in the spirit of social justice.'

Alma Ata Declaration, 1978'

Social justice, or equity, is not a new concept. In health, its universal recognition as a goal extends back a generation, to 1978, when the World Health Organization recognized its importance for improving the health of the world's people.

Thus, all at once, the World Health Organization took a stance on an operational definition of health ('permit them to lead a socially and economically productive life') as well as a stance on the distribution of that health in the population ('all peoples of the world'). Pushed off course for the past quarter-century, the World Health Organization is poised to reaffirm its commitment.²

What Does Equity in Health Mean?

A persistent challenge is clarifying the concept of equity. The United Kingdom, arguably the industrialized

country with the most explicit attempt to modify the adverse effects of its historical class structure, set its remediating course by focusing primarily on reducing inequalities in health across social classes, although even this has not been consistently expressed in policy documents.³ Equity in access to health services was a founding principle of the National Health Service and is central to expressed current government policy.⁴ Explicit ethical frameworks, such as the one used in Sweden, are based on the notion that health contributes to the lives people want to live and Rawl's theory that inequalities in primary goods are fair only if they do not require sacrifices from the worst-off groups in society.⁵

Assuming that it is necessary to monitor the state of equity in order to tailor policy to achieve it, these positions raise two questions: what is 'fairness' and what is necessary to achieve it?

This essay is restricted to the improvement in equity in health through health services (while recognizing the myriad of other influences on the distribution of health in populations). It takes the position that fairness is manifested by systematic and potentially remediable differences in health across populations defined

geographically, demographically, and socially. The fact of being systematic defines the situation as a non-chance phenomenon; that is, it is intentional by design or by default. The definition is clearly one that relates to population subgroups, and not to individuals, although the manifestations ultimately devolve upon those individuals. Any other disparities, or disparities across individuals not sharing some particular characteristic, are inequalities, not inequities; their remediation does not generally require a societal action. Equity, or social justice, requires a population perspective, not an individual perspective. Inequities, by definition, require societal remediation because of their systematic nature.

The second question concerns the appropriate goal for remediation, where systematic differences are present. Some policy-oriented writers take the position that equity in structures, i.e. in intent, is sufficient. In this approach, it is adequate that mechanisms be designed to enable people to take advantage of them; the rest is up to them to do so. But, is equality of opportunity (such as equal access) sufficient? Horizontal equity of access - equal access for equal need, is clearly insufficient. If the problem is unequal need, then horizontal equity will not resolve the

problem of unequal need. Even if access were vertically equitable, however, there would be no assurance of approaching equity in health, because access alone will achieve little in the absence of use of appropriate services. In the United States, for example, equal financial access for different levels of need (no barriers to the seeking of needed care) does not achieve equity in health, because of other barriers to use of services, including geographical as well as psychological. In countries with generally adequate equity in access to primary care services (such as Canada and Sweden), there are remaining barriers to equity in the receipt of specialty services, for no obvious reason.⁶ Equality of opportunity to interventions, then, is not equivalent to opportunity for equity in health, nor is it an adequate substitute for it.

I take the position that the primary goal should be equity in health, consistent with most international and national goals.

What Does It Take to Develop a Strategy for Achieving Equity in Health?

Strategies for achieving equity in health require, above all, an understanding of what generates these inequities and by what means

they are generated. Unfortunately, the most that can be said is that there is something known about what influences health, but the extent to which these influence inequities is not understood. The Acheson committee⁴ used two frameworks to guide its deliberations; the first provided the categories that had to be considered (general socioeconomic, cultural, and environmental conditions, social and community networks, individual lifestyle factors, age, sex, and constitutional factors). The second expanded the number of classes of influences, linking them with a complex pattern of singled-headed arrows depicting 15 pathways from one to one or more others. Neither framework included health system or medical care characteristics.

Figure 1 builds on these frameworks but differs from them in several ways:

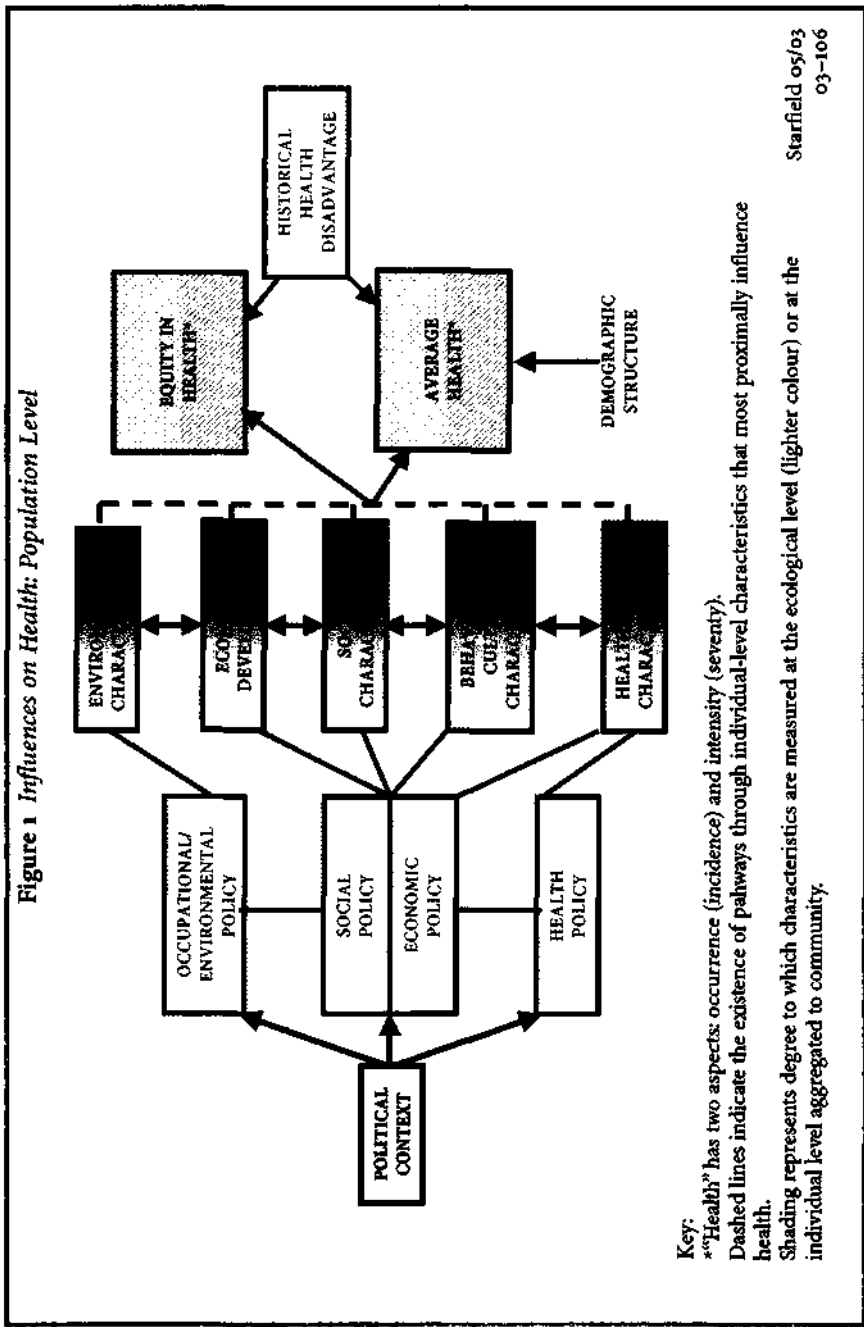
- Most pathways are bidirectional, indicating that many of the influences interact with and potentiate others.
- The concept of population health, instead of individual health, is explicit.
- Equity in health, as well as average health, is an outcome.
- The influence of health services

(both public health as well as personal health services) is explicitly included as a category of influences.

- The role of political structure as well as of types of policy (including health policy) is explicitly included as a level of influence.
- Community factors are both influenced by policy and, in turn, influence individual factors.

The vast historical and current literature on socioeconomic differences in health documents the importance of each of the categories of characteristics in Figure 1. What has been missing, until recently, is empirical evidence concerning the pathways through which the categories of influence operate and the interactions among them.

Pathways to improving equity in health (Figure 1) differ according to the particular health outcome as well as the particular population. Many studies of social gradients have shown the importance of antecedent factors (particularly parental education); parental education may operate at least in part through subsequent social class and through social control and participation. The effect of social control is particularly notable on gradients in heart disease mortality.⁷ However, low education



appears not to have a direct effect on heart disease mortality or infant mortality, at least in the UK.⁸

In developing countries, illiteracy is particularly important, even in the presence of income disparities and gross domestic product per capita, as shown in the case of life expectancy.⁹ In the US (California), educational attainment is strongly associated with obesity, even in the presence of many other sociodemographic factors examined at the individual level. Obesity, in turn, is associated with shortened life expectancy of about three years; obese smokers die, on average, 13 years earlier than nonsmokers of normal weight.¹⁰ However, the study included only three possible confounders: physical activity, educational level attained, and presence of hypertension or diabetes.

The large number of studies documenting the influence of socioeconomic and demographic characteristics on health laid the groundwork for strategies that attack these characteristics themselves: most notably income, housing, and education, particularly that of women.¹¹ Wilkinson and Marmot's¹² recent review of the impact of these factors reflected the state of the art in dealing with the fact of association of the influences on health and not their relative

magnitude of association or interactions, even though explicitly recognizing that disadvantages tend to concentrate among the same people and accumulate during life. Consistent with the social determinants literature, the review takes an individual perspective rather than a societal perspective: 'the same people' rather than the 'same population groups'. Herein lies an important distinction between social determinants research and equity research.

Little attention has been devoted to considering the possibility of different pathways to different health outcomes. Common outcomes are infant mortality, heart disease mortality, and mental illness. Very few, if any, studies consider the extent to which the findings are generalizable across the range of health outcomes. That is, very little research on equity is driven by theory about what should influence what aspect of health, and why. The most common approach is to assume that an individual model of influences pertains to the population. A review of Latin-American literature on equity revealed that 84% of the empirical studies involved only first-level (most proximate) indicators, despite a heavy focus of the literature overall on more antecedent factors.¹³ Thus, a

model that explores the most proximate individual factors implicitly dominates most research, (Figure 2), whereas a model that is addressed at equity more appropriately would use a population approach (Figure 1) and inquire as to the mechanisms through which more distal factors influence more proximal ones at the population or subpopulation level. This difference reflects the difference between relative risk and attributable risk; an individual factor may place a particular individual at high risk but be very uncommon in the population. Herein lies another distinction between social determinants research and equity research.

Several studies address the importance, in the genesis of ill health, of social connectedness and power relationships, and influence of the physical and cultural environments as well as historical health disadvantage. Some writers even go so far as to document the degree of risk attributable (on a population level) to a particular category; a well cited example is the analysis conducted by McGinnis and Foege, from which they deduced that individual behavioural characteristics accounted for about half of increased deaths. In their discussion, however, they recognized

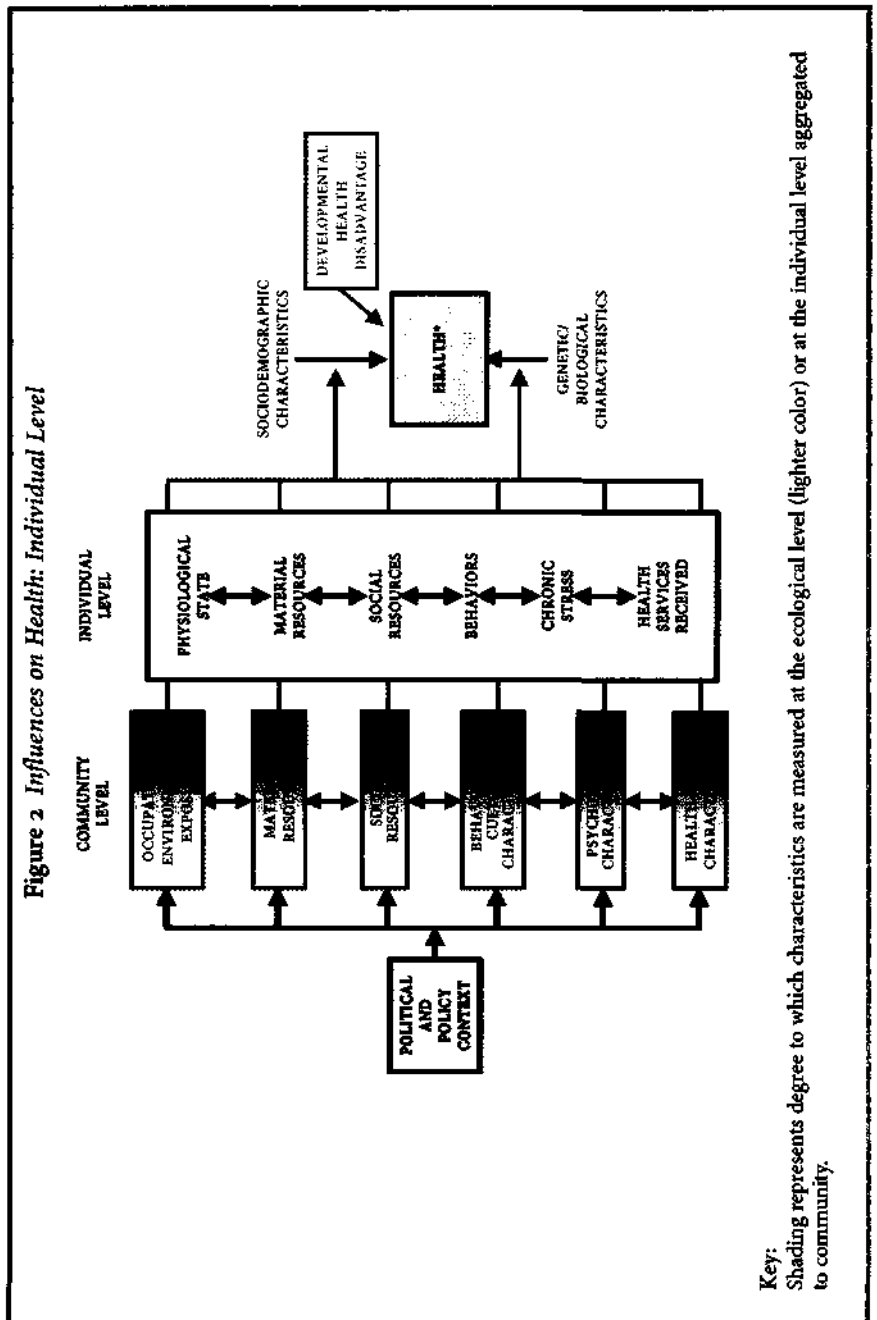
that they did not account for competing hypotheses or interacting influences that included, for example, the impact of health services (particularly primary care) in their calculations.¹⁴

Thus, the accumulated evidence goes far in providing information about the influences on average health, but, with the exception of the literature on the health impact of social and educational gradients, contributes little on the nature of the genesis of systematic and potentially remediable inequalities in health across population subgroups (i.e. inequities).

What Is Known about the Achievement of Equity in Health?

1. Characteristics of areas are likely to have more of an influence on health among the socio economically disadvantaged. Variability in health across local areas is greater among the lower socioeconomic classes than among the higher classes.¹⁵ Therefore, efforts to identify and alter particularly detrimental area characteristics will preferentially reduce inequities in health.

2. Educational attainment is most influential on those aspects of health that require knowledge.^{16,17}



Therefore, increasing educational levels will preferentially improve those aspects of health that are responsive to preventive actions taken at the individual level. Expectations of change at the population level will require an upward shifting of the average level of education across the entire disadvantaged population. Similarly, standardized individual interventions are less successful in improving equity in health because they are less successful in relatively deprived populations than in more advantaged populations.*¹⁹ As a result, population-oriented approaches that are not directed at changing individual behaviour are more efficient in improving equity when they are a possible alternative.

3. The weakest association between income and health is in the elderly.²⁰

4. From a societal viewpoint, social disadvantage is especially harmful early in life²¹ because the impacts on later health are both direct and indirect, thus compounding the risks.²²

5. As most studies of population subgroup differences focus on differences across socioeconomic groupings, the pathways elucidated take aspects of socioeconomic status into consideration. The overall findings suggest that socioeconomic

status operates through three types of linkages, which together account for about four-fifths of poorer health as represented by premature mortality.²³ These three are: behaviour and lifestyle, environmental exposures, and health care, contributing an estimated 50%, 30% and 10% respectively.²⁴ However, these factors are themselves inter-related, and the proportions attributed to them may be distorted. For example (and as noted above), the percentage attributable to behaviours derives from an analysis that did not take into account relationships with environmental exposures or receipt of important health services.

6. The influence of community characteristics on health differs by population group, by the particular measure used to characterize the community, and by the particular measure of health. There is little doubt, however, of its powerful effect in many circumstances, based on the relatively recent advent of the multilevel types of analyses that have been used to study the influences.²⁵

7. Differences in health across the social spectrum are greater for co-morbidity and other manifestations of severity of illness than for occurrence of illness.^{26,29} This observation is of considerable importance in considering

alternative modes of intervention. Its lack of recognition may account for the fact that few empirical studies of the pathways between socioeconomic status and health examine the possible impact of health services and, particularly, the types of health care that populations receive, despite evidence that there are such influences.

The Special Effect of Health Services

Health services contribute in two main ways to improvements in health, through promotion of health and prevention of the occurrence of illness and, secondly, by means of interfering with the progression of ill health. Public health activities are predominantly promotional and preventive through their impact on legislation, regulation, and community actions. Clinical medicine also contributes to prevention, through activities such as immunizations and presymptomatic detection of impending illness. However, clinical care operates mostly through interfering with the progression of illness to complications, disability and death. Therefore, the major impact of clinical health services would most likely be on the severity of

manifestations of illness and on death rates; as noted above, what evidence exists suggests that this is the case.²⁸ Thus, the choice of endpoint is critical in choosing the particular strategy to reduce the inequity.

Because morbidity clusters in particularly vulnerable subgroups rather than being randomly distributed,³⁰⁻³² overall improvements in equity in health are likely to require generic interventions rather than ones directed at specific manifestations of ill health (such as diseases). This logic provides the basis for hypothesizing that health services interventions that are directed at people (i.e. primary care) have more of a likelihood of improving overall equity in health than those directed at specific diseases, i.e. specialty care. An additional rationale for this hypothesis is that primary care is more accessible to people than is specialty care. Primary care is also less costly, thus making it possible to share resources more equitably across the population. Empirical analyses within the most recent decade^{33,34} showed that primary care-oriented health systems generally have better health, on average, as measured largely by health indicators reflecting deaths rates and low birth-weight rates - measures of severity.

Can the same be said regarding equity in health?

From the vantage of developing countries, investments in primary care produce more equity than investments in the health system in general. For example, Castro-Leal and colleagues³⁵ have shown that the highest 20% of the population receives well over twice as much benefit from overall health services investment than the lowest 20% (30% versus 12%). For primary care investments, however, the rich-poor benefit ratio is much lower (23% versus 15%).

In developing countries, the burden of child mortality (which is most heavily concentrated in disadvantaged populations) can be greatly reduced by interventions known to be effective, all of which are primary care interventions.^{36,37}

In industrialized countries, most evidence on the impact of health services on equity comes from the highly inequitable United States. Politzer et al³⁸ showed lower low birth weight percentages in people receiving their care in community health centres (CHCs) as compared with the rest of the population in the United States. These centres deliver services to populations in underserved geographic areas and are required to maintain standards for high quality of primary care

delivery. The differences in low birth weight percentage between African-Americans and Caucasians were less (both absolutely and relatively) than was the case in the general population, indicating greater equity.

In the US population as a whole, there are large differences in healthy life across racial/ethnic subpopulations, such that low income African-American and Hispanic populations have a less healthy life than the population as a whole. In contrast, CHC Hispanic populations have a significantly more healthy life than white and African-American CHC subpopulations; there are no differences between the latter two groups.³⁹ A similar study comparing years of healthy life found, as expected, that poor people in the general population had a much higher likelihood of fewer years of healthy life; poor CHC patients, in contrast, were much closer to non-poor people in years of healthy life.³⁹

A series of studies that stratified for degree of income inequality in the United States found lower rates of ill health in those areas with high income inequality that were better endowed with primary care physicians and much worse health in these income inequitable areas poorly endowed with primary care physicians. The measures of health were self-reported health (in 60 representative communities in the

US), postneonatal mortality in the 50 US states, and mortality from stroke in the 50 US states (based on data in Shi⁴⁰). Most notably, from the vantage of equity, this series of studies showed that primary care had a greater impact on total mortality for African-Americans than was the case in white populations.⁴¹

What can be said about the impact of primary care on equity when primary care is already well-developed? In the Netherlands, where primary care is well developed, differences in manifestations of ill health between high and low socioeconomic status have been decreasing over time. Mackenbach demonstrated the increase in equity for perinatal mortality between 1946 and 1980, and for infant mortality between 1854 and 1990.⁴² In that country, recent foci have been on equity-producing strategies, including maintaining a strong primary care focus, and on improving primary care in geographic areas where it is inadequate.

Implications for Policy Directed at Improving Equity in Health

Because of its salience in current debates on patient centredness, something must be said about its relevance to equity concerns. Patient-centredness in the individual context of the doctor-patient relationships

can only be justifiable to the extent that it (a) improves the likelihood of overall health (unless the patient explicitly desires poorer health), and (b) that it improves equity in the distribution of health (unless the patient, in the spirit of autonomy is uninterested in equity in health in the population). Patient-centredness, in the context of equity, should be both an individual issue and a population issue⁴³ with explicit understanding that the two are different and require different strategies because 'equity and self-interest often do not point in the same direction'.⁴⁴

The large and unexplored potential of pathways analysis is to capture the full range of influences, from the most distal to the most proximal, on health. From the point of view of equity in health, which requires a population viewpoint, it is necessary to use a conceptual framework based both on existing empirical evidences as well as on sound theoretical rationales, such as presented in Figure 1, to set the stage. From a population viewpoint, it is the more indirect categories of influence that are most important: the political, the policy context, and the community influences.

Ecological factors do have an influence on individuals as well as on populations.⁴⁵ The range of studies that demonstrate these community,

policy, and political contexts is becoming broader. Coburn cogently argued that very distal factors, such as globalization and its influence on government policies, have a demonstrable relationship with health.⁴⁶ Social inequality and racism have been shown to be related to excess cardiovascular mortality among African-Americans in the US.⁴⁷ Correlations (controlled for Gross Domestic Product and weighted for population size) between a variety of political variables (such as voter turnout, years of social democratic government, females in government, social security expenditures, the redistributive effect of state expenditures, and total public medical care) are associated in various degrees with mortality, mortality by cause, and life expectancy in 16 OECD countries. Relationships with social capital variables (which are obtained at the individual level and then aggregated) showed weaker associations.⁴⁸ From an equity point of view, the percentage of government subsidies to the health sector that reach the poorest 20% of the population is an important policy consideration; Victora and colleagues,⁴⁹ in an analysis including nine developing countries, showed that this percentage varied from about 20%

(in Sri Lanka) to less than 5% in Guinea.

There are also marked differences in equity among industrialized countries. Patient-reported experiences of their health care were elicited in five English-speaking countries (UK, US, Canada, Australia, and New Zealand).⁵⁰ Patients were stratified into two groups according to whether their income was below country average or above it. Large differences between the two groups were found for all eight areas of concern. For all eight, the US differences were much larger than was the case in the other countries, generally of the order of four to seven times the percentage differences between the two groups, as was the case in the country with the least magnitude of difference (the UK). The differences between the two groups ranged from none or negative to a 27% difference in the US. For the five countries as a whole, the average extent of differences between the top income group and the bottom income group were least in the UK (10.5 percentage points) followed by Australia (16.5), then New Zealand and Canada (26.5 and 28 percentage points respectively) and then the US. (38.5 percentage points).

A major consideration is the mechanism for translating research

findings into policy. Case studies from five countries perhaps provide some lessons. These case studies come from Chile, South Africa, United Kingdom, Netherlands, and China. All were presented at a small working conference entitled 'Health Equity Research: Beyond the Sound of One Hand Clapping,' in Bellagio, Italy, in April 2003.

In Chile, the focus is on developing goals and objectives and developing plans to monitor their attainment. The engagement of the population and of high officials in the sympathetic government has been much greater than, for example, in the United States, where goals have been set but there are no plans for implementation.

In South Africa, dealing with mother-infant transmission of HIV/AIDS was hampered by an inadequate specification of policy alternatives. The lesson here is that addressing the challenges of a particular disease (HIV/AIDS) may be better approached through a strategy of providing widespread basic (primary care) services, which would have been more acceptable to the affected population and its representatives.

The experience in the United Kingdom, particularly as represented by the government-commissioned Acheson Report, is also instructive.

In that Report, alternative strategies were delineated: addressing poverty, medical care for the 'major killers', improving transport to public services, making environments safer, and dealing with the effects of social exclusion. However, it was criticized for lacking a coherent ethical framework and for focusing on improving overall health rather than its distribution. The contrast with the approach in the US is striking; a comprehensive report commissioned by a concerned government led to a range of governmental policies directed at various aspects of the recommendations in the UK whereas the major effort in the US was to set goals without a specific set of governmental strategies.

The Netherlands experience was based on a long history of research concerning influences on health and on a long tradition of social solidarity that made inequities unacceptable. Several policy strategies were chosen, the most prominent of which was to change individual behaviours that were risks for poor health. Other strategies were to reduce physical workloads; to improve local networks particularly to address social problems among the mentally ill; to maintain existing pro-equity education policies, redistributive income policies and

work disability payments, pro-equity health services financing; and to increase the provision of primary care in geographic areas with poor access.

China, on the other hand, was faced with large proportions of the population having no financial access to health services. Once it was shown that health problems in rural areas were themselves generating poverty, individuals at the highest levels of government realized the political advantages of taking steps to reduce poverty by providing financial access to health services in the form of medical care insurance to this population group. The US had already adopted that type of strategy in the form of the Medicaid program directed at its poor population; its lack of success in eliminating disparities in health insurance and in receipt of adequate services may well provide a lesson for China as it implements its policy.

Health policies, such as those directed at distributing resources (including health professionals) more equitably, more attention to the adequacy of primary care resources and more informed use of specialty services, and elimination of co-payments for primary care are known to be associated with better health and can be expected to improve equity through their

redistributive effects.^{33,51}

Remaining for the future, however, is an understanding of how these relatively distal influences operate through more proximal ones. From a policy vantage, it is useful to have an understanding of feasibility, practicality, and effectiveness of various types of strategies for intervention.

Moreover, it is useful to know which interventions will have the greatest impact on the greatest number of important health outcomes. Few, if any, policy documents are based on such information. The Acheson Report recognized that interventions targeted at mothers and children are of high priority; studies have shown that birth outcomes and children's health indicators are most readily influenced by policy changes. Other policy strategies are not as well informed, as a result of a paucity of studies on the mechanisms by which health is influenced. Such is the future of our understanding of inequity in health and approaches to reducing and eliminating it.

Policy Strategies

The knowledge provided by the summary of research on equity

suggests directions for certain policy strategies.

1. Resources should be distributed preferentially where they are lacking. Several countries make explicit attempts to regulate the distribution of health practitioners so that resources are distributed more equitably. For example, some northern European countries and some provinces in Canada do not reimburse or otherwise pay physicians who settle in areas that already have enough physicians. In Australia and in Canada, non-primary care specialists receive lower reimbursements if they see patients who are not referred by primary care physicians.

2. Goals and objectives should be explicitly linked with specific interventions. As noted above, different aspects of health respond preferentially to some types of interventions. For example, health-promoting behaviours are heavily influenced by educational levels whereas prevention and management of some illnesses are more sensitive to the level of material resources. Those aspects of health that are particularly amenable to primary care services (as distinguished from other types of services) are known,^{52, p 309} policies aimed at strengthening primary care could be expected to improve health levels for these

particular health problems. Little is known, however, regarding the specific types of outcomes that can be expected from specialty care, either in terms of effectiveness or equity in health.

3. Policies directed at improving physical and social environments for populations will result in greater equity, because they do not require individual behaviour change that is particularly influenced by material wealth, education, or social connectedness. A prime example is U.S. legislation directed at the de-leading of gasoline, which was not only extremely effective in reducing lead poisoning among children but also greatly reduced differences between disadvantaged and more advantaged populations.

4. Policies directed at infants and children will have a much greater long-term effect than will policies directed at older individuals or populations. This is not only because children have a longer time to live, but primarily because of the influence of early health on later health.

5. Policy makers have alternatives. The range of alternatives is informed by knowledge about the types of influences on health that are amenable to policy intervention (Figure 1). Choice depends upon

whether the goals are improved overall health or better distributions of health within the population, whether the potential for indirect effects is possible, and the relative costs in the long and short term. The possibility for indirect effects should not be neglected; even though the influence of political context is remote, studies have shown a relationship between the type of government and at least certain aspects of the health of populations.^{53,54} Similarly, policies that are directed at political strategies that improve the economic autonomy of women and their political participation rates are related to better health.⁵⁵

6. National health goals to improve overall health may lead to greater inequities unless special efforts are made to have a preferential effect on the less advantaged. On the whole, the areas in which inequities in health primarily exist are in common manifestations of ill health and in the severity and progression of common illnesses. Second, interventions that are directed at societal and policy changes are likely to have more of an impact than interventions directed at individuals.⁵⁶ Third, there is a clear role for appropriate health services in reducing inequities in health, e.g.

by attacking severity of illness and preventing co-morbidity.

Summary

1. Equity in health is the only outcome that counts.
2. Equity is a population issue, not an individual issue. The literature on social determinants of health generally deals with the impact of influences, one by one, on individuals. It is insufficient as a basis for understanding and dealing with inequity.
3. The impact of health services on equity in health is but one of many types of impacts on health.
4. Social differences in health are greater for manifestations of illness severity (including mortality) than for occurrence of illness.
5. Health services can influence the occurrence of ill health. Its major current impact, however, is on severity and progression of ill health. Measures of the impact of health services should focus heavily on severity, including case-fatality rates (or, in their absence, death rates) except where occurrence of illness is known or is thought to be related to receipt of health services (primarily primary care and public health services).
6. Equity of access to health services, by itself, is not a useful

strategy in industrialized countries. What matters is *use of appropriate* health services.

7. Attention to, and evaluation of, the adequacy of health services should match the desired outcome with the likely relative influence of various aspects of health services, e.g. primary care, specialty care, and public health services.

8. Because the definition of equity includes references to systematic differences, the relevant consideration for understanding the impact of interventions concerns sub-population health indicators. Differences in individual behaviours or life style are

not relevant for equity considerations.

If population subgroups differ in the existence of predispositions to ill health, e.g. cultural preferences for alternative life styles, or modes of therapy, policy needs to consider the extent to which efforts should be made to engage these subgroups in decisions about the impact on their health of these preferences.

9. Standard measures of health should include measures of equity in health. International comparisons should include both distribution of health as well as average health in national data.

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